

ST. JOE LODGE RESTAURANT (PWSNO 1400045) SOURCE WATER ASSESSMENT REPORT

March 3, 2003



State of Idaho Department of Environmental Quality

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SOURCE WATER ASSESSMENT FOR ST. JOE LODGE RESTAURANT

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like St. Joe Lodge Restaurant, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for St. Joe Lodge Restaurant* describes factors used to assess susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use inside the delineation boundaries, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for St. Joe Lodge Restaurant is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Well Construction.

The St. Joe Lodge Restaurant water system serves a restaurant, a residence, a 4-unit motel and a 25-space RV park. A 140-foot deep well that was drilled in 1981 supplies drinking water for the system. Except for a minor variation in the 6-inch steel casing wall thickness, the well appears to meet current Idaho Department of Water Resources construction standards. The casing extends 10 inches above the floor of the pump house and is fitted with a sanitary well seal. The well log does not note the casing depth. A 20-foot deep puddling clay surface seal extends into a permeable layer of sand and gravel. The static water level is 30 feet below land surface. With the pump set at 45 feet, the well produced 35 gallons per minute when it was tested at the time of drilling.

The system was mostly in compliance with the *Idaho Rules for Public Drinking Water Systems* when it was inspected in December 1997. The only needed repair to the wellhead was installation of a screened vent.

Well Site Characteristics.

Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zone delineated for your well. Soils covering recharge zone delineated for St. Joe Lodge Restaurant are moderately well to well drained. Soils in these drainage classifications are less protective of the ground water than soils that drain slowly. The well log shows 55 feet of boulders, sand, gravel, and clay lying above bedrock at the well site. Water was first encountered in a granite and quartz stratum 55 to 70 feet below the surface.

Potential Contaminant Inventory.

The 1000-foot radius recharge zone delineated for the St. Joe Lodge Restaurant well is mostly undeveloped National Forest land. The well is about 200 feet south of the St. Joe River and above the 100-year flood plain. The public water system file does not indicate whether the well has been evaluated for surface water influence. Potential contaminant sources inside the recharge zone include an underground fuel storage tank, the septic system, and a shallow dug well that formerly supplied the water system. The file does not document the locations of these potential sources of contamination relative to the well other than to note they apparently meet required setbacks. The 1997 sanitary survey report instructed the system to ensure that the dug well is completely disconnected from the water system, and is abandoned properly.

Water Quality History.

St. Joe Lodge Restaurant has a good water quality history. In the period from February 1993 through the present only one quarterly sample has tested positive for total coliform bacteria. Follow up testing was negative. Nitrate has not been detected in annual samples. The system has occasionally failed to monitor as required for nitrate and total coliform bacteria.

Susceptibility to Contamination.

An analysis of the St. Joe Lodge Restaurant well, incorporating information from the public water system file, and the potential contaminant inventory, ranked the well at moderate risk relative to all classes of regulated contaminants. Risk factors related to local geology added the most points to the final susceptibility scores. The complete ground water susceptibility work sheet for your system is on page 6 of this report. Formulas used to compute final scores and susceptibility rankings are at the bottom of the worksheet.

Source Water Protection.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure water quality in the future is to act now to protect water supply resources.

St. Joe Lodge Restaurant already has some significant safeguards in place. An insulated wood frame well house with a drained concrete floor protects the well head, and a locking door prevents unauthorized access.

Continuing to operate and maintain the well in compliance with the *Idaho Rules for Public Drinking Water Systems* is probably the most important drinking water protection tool available to St. Joe Lodge. There are a number of voluntary water protection measures the St. Joe Lodge Restaurant can implement. It might be useful to develop a written testing schedule so this important task doesn't get overlooked. Every system should develop an emergency response plan. There is a simple fill-in-the-blanks form available on the DEQ website to guide systems through the emergency planning process.

The St. Joe Lodge Restaurant should also investigate ground water stewardship programs like Home*A*Syst. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include petroleum product storage, septic system maintenance, handling and storing lawn and household chemicals and similar activities. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

Assistance.

Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

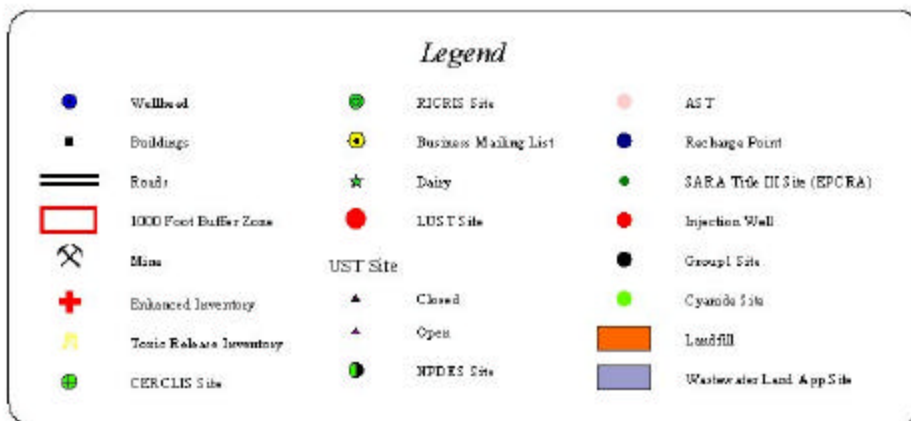
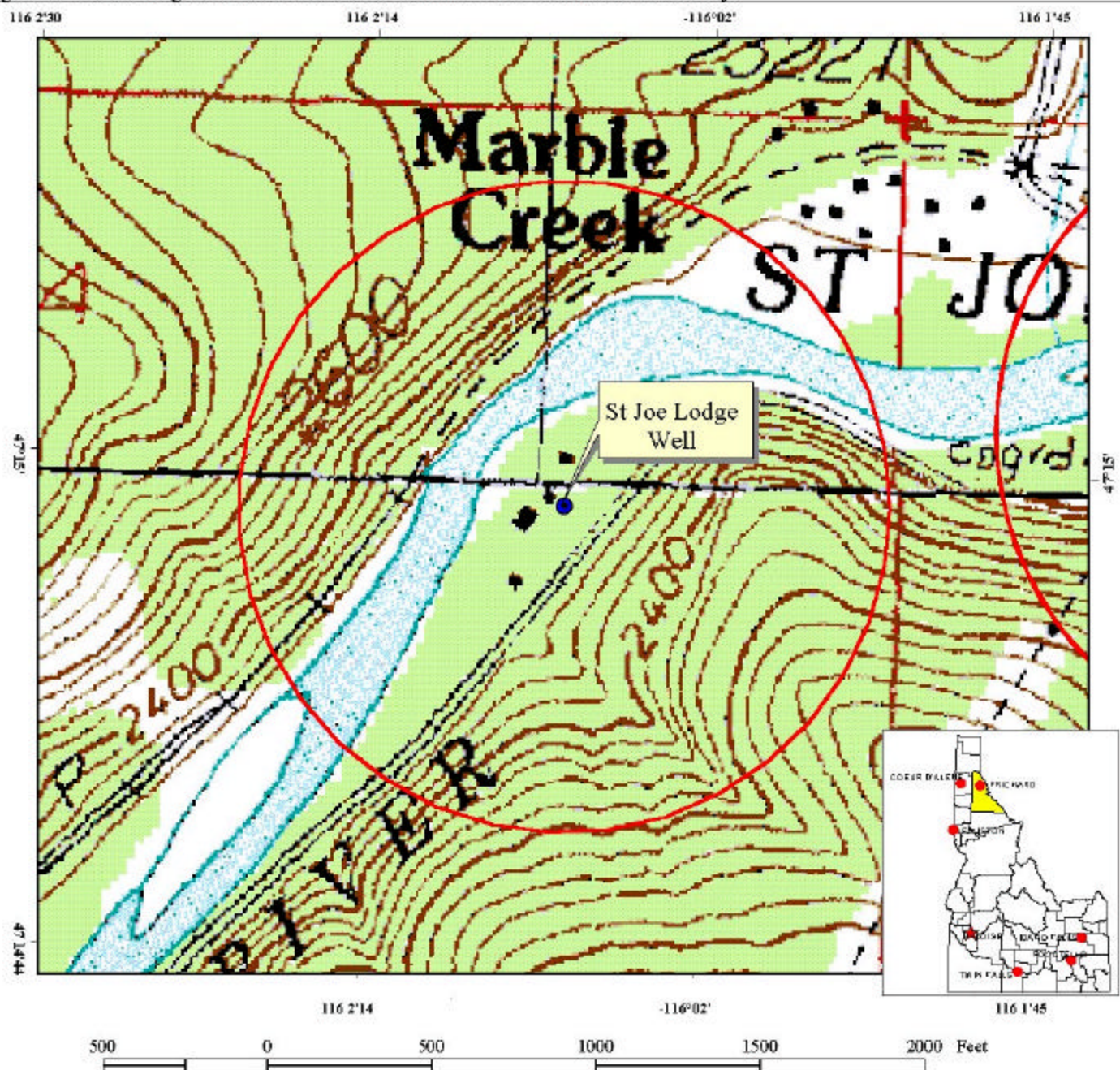
DEQ Website: www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper of the Idaho Rural Water Association (208) 343-7001 for assistance with drinking water protection strategies.

Idaho Rural Water Association Website: www.idahoruralwater.com

Home * A * Syst Website: www.uwex.edu/homeasyst

Figure 1. St. Joe Lodge Restaurant Delineation and Potential Contaminant Inventory.



PWS # 1400045
St. Joe Lodge Restaurant
Well

Ground Water Susceptibility

Public Water System Name :

ST JOE LODGE RESTAURANT

Well # :

WELL #1

Public Water System Number :

1400045

12/9/02 11:41:38 AM

1. System Construction			SCORE			
Drill Date	8/11/81					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	1997				
Well meets IDWR construction standards	YES		0			
Wellhead and surface seal maintained	YES		0			
Casing and annular seal extend to low permeability unit	Seal no. Casing unknown		2			
Highest production 100 feet below static water level	NO		1			
Well located outside the 100 year flood plain	YES		0			
Total System Construction Score			3			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	NO		2			
Vadose zone composed of gravel, fractured rock or unknown	YES		1			
Depth to first water > 300 feet	NO		1			
Aquitard present with > 50 feet cumulative thickness	NO		2			
Total Hydrologic Score			6			
3. Potential Contaminant / Land Use			IOC	VOC	SOC	Microbial
			Score	Score	Score	Score
Land Use	National Forest		0	0	0	0
Farm chemical use high	NO		0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO		NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score			0	0	0	0
Potential Contaminant / Land Use - 1000-Foot Radius						
Contaminant sources present (Number of Sources)	YES	Old well, surface water, septic system, and fuel storage.	1	1	1	3
(Score = # Sources X 2) 8 Points Maximum			2	2	2	6
Sources of Class II or III leacheable contaminants or Microbials	YES		1	1	1	
4 Points Maximum			1	1	1	
1000-Foot Radius contains or intercepts a Group 1 Area	NO		0	0	0	0
Land use 1000-Foot Radius	Less Than 25% Agricultural Land		0	0	0	0
Total Potential Contaminant Source / Land Use Score - 1000-Foot Radius			3	3	3	6
Cumulative Potential Contaminant / Land Use Score			3	3	3	6
4. Final Susceptibility Source Score			10	10	10	11
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

0 - 5 Low Susceptibility
 6 - 12 Moderate Susceptibility
 > 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ? Superfund? is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.